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Harnessing Thunderbolts

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THE FIRST HALF of the 20th century taught the US Army that traditional faith in firepower was appropriate for total wars and battles of annihilation. America had trusted its industrial base to provide overwhelming amounts of materiel and expected military leaders to transform those assets into tremendous combat power. Thus, the United States was able to survive the first part of the 20th century with an incredibly small standing Army and emerge victorious from its two most significant wars. Not surprisingly, after spending approximately 50 years learning how to maximize combat power on the battlefield, US military leaders were eager to incorporate their findings into doctrine and avoid the painful lessons that ground forces had learned in virtually every previous conflict.

Consequently, upon entering the Korean conflict, the country's first limited war of the nuclear era, US Army doctrine prescribed annihilating opponents through the maximum application of firepower. However, for the first time the United States also faced the threat of nuclear retaliation from another country. Many of the actions associated with total wars proved unsuitable for operations in limited wars, so America adjusted to the delicate Cold War climate and sought to avoid escalating conventional conflicts, nuclear exchanges or even a Third World war. This restraint prevented the Army from continuing to rely on the approach to warfighting that had worked so well in recent experience.

Still, US political and military leaders could ill-afford to surrender the enormous firepower advantage, especially when facing opponents who were fighting total wars and possessed substantial numerical advantages in troops. As a result, one of the most important capabilities US ground forces developed in the limited wars of the second half of the 20th century was the ability to *control* the massive amounts of available firepower.[1] As events during the recent NATO actions in Yugoslavia have demonstrated, this very difficult objective is an ongoing process. The Army began refining its ability to control combat power during the Korean War, and many of the lessons that the Army learned then resonate in our doctrine today.[2]

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According to US Army Field Manual (FM) 100-5, *Operations*, control is an inherent part of battle command. Control is effective if "it allows the commander freedom to operate, delegate authority, lead from any critical point on the battlefield and synchronize actions across his entire [area of operations]."[3] Here I will argue that the US Army learned valuable lessons regarding ways to control its combat power on the battlefield during the Korean War—how to "harness its own thunderbolts." In particular, the Army learned to better orchestrate its direct fires and synchronize its indirect fires to maximize their battlefield effects. In addition, the Korean War experience provided the impetus for resolving the ambiguity surrounding control over theater commanders in chief (CINCs) that had existed since World War I.

Perhaps the greatest control leaders can exert in battle is that which compels their soldiers to risk injury or death by firing their weapons in battle. Traditional linear tactics oriented on maximizing this aspect of battlefield control, but the more open tactics of the 20th century have forced commanders to innovate to elicit soldiers' participation in combat, especially when they cannot even see one another.

US Army

An infantryman returns fire with his M-14 rifle during early operations in Vietnam.

Tests began in 1953, in response to the poor marksmanship skills demonstrated by many Korean War-era soldiers. . . By improving soldiers' confidence in their ability to successfully engage a variety of target at ranges from 50 to 300 meters, Army leaders also increased the tendency of individual soldiers to engage the enemy during firefights.

To increase their level of battlefield control over direct fires during the last half of the century, Army leaders used three important techniques:

- They added more automatic weapons to the infantry rifle squad and platoon.
- They improved the Army's method of marksmanship instruction.
- They subdivided the infantry squad into two fire teams.

These efforts, largely results of the Army's Korean War experience, improved commanders' control of their forces and are still evident in today's Army doctrine.

The infantry platoon of World War II and the Korean War contained 42 soldiers; discounting the platoon headquarters element, each had an effective strength of 36 soldiers. Despite this apparent similarity, the infantry squad and platoon organizations of the Cold War era differed greatly from their World War II predecessors. Unlike the 12-soldier squad of World War II, the Korean War infantry squad had three fewer soldiers and an additional automatic rifle. It consisted of nine soldiers: a squad leader, an assistant squad leader, two Browning Automatic Rifle teams (each consisting of a rifleman and an assistant gunner), two riflemen with M-1 Garand rifles, and one sniper with an M-1 Garand sniper rifle.[4] Similarly, while the World War II infantry platoon contained three squads of 12 soldiers each and a platoon headquarters element of six soldiers, the Korean War infantry platoon consisted of three of these nine-soldier squads and contained an additional weapons squad of nine soldiers and a platoon headquarters identical to that in the World War II platoon. The weapons squad consisted of a squad leader, a four-soldier bazooka team, and a four-soldier machinegun team with the .30 caliber machinegun.[5]

These changes significantly increased the firepower available to small-unit leaders by adding one automatic weapon to each infantry squad, for a total of two, and five automatic weapons to each infantry platoon, for a total of eight. S.L.A. Marshall held that men operating crew-served weapons almost always fired their weapons in combat and that a unit's rifle fire tended to build up strongly around its automatic weapons, so one would expect an increase in the "ratio of fire" from such a unit. This is in fact what occurred. By Marshall's own reckoning, which can be substantiated using information other

than Marshall's own somewhat suspicious data and a secret formula that died with him in 1977, the American infantry platoon's ratio of fire increased from a high of 25 percent in World War II to approximately 55 percent by the end of the Korean War.[6]

Another way that Army leaders significantly increased their control over direct fire on the battlefield came largely as a result of the development of

To increase their level of battlefield control over direct fires during the last half of the century, Army leaders used three important techniques: They added more automatic weapons to the infantry rifle squad and platoon; improved the Army's method of marksmanship instruction; and subdivided the infantry squad into two fire teams.

TRAINFIRE, a revolutionary system of marksmanship training.[7] *TRAINFIRE* provided more realistic rifle marksmanship training by using pop-up targets in realistic target arrays to improve riflemen's performance in combat. This system was also intended to increase soldiers' confidence in their weapons, and induce them to fire more often in combat.[8]

Before adopting *TRAINFIRE*, the Army had used a system of basic marksmanship instruction based on known-distance ranges. Soldiers fired from a series of formal positions on a level firing line at "bull's-eye" targets raised and lowered from pits dug at specific and uniform distances. By contrast, *TRAINFIRE* ranges required soldiers to fire from pre-dug fighting positions and used "E"-type silhouettes mounted on pop-up devices, called "Punchy Petes," as targets.[9]

Tests on the initial *TRAINFIRE* version began in 1953, in response to the poor marksmanship skills demonstrated by many Korean War-era soldiers. After four years of testing, the Army formally adopted *TRAINFIRE* as its basic rifle marksmanship training method in the summer of 1957 and began implementing it throughout the force during Fiscal Year 1958.[10] Once adopted, it took the Army three years to construct the required number of ranges in America and overseas.[11]

By improving soldiers' confidence in their ability to successfully engage a variety of target at ranges from 50 to 300 meters, Army leaders also increased the tendency of individual soldiers to engage the enemy during firefights. The increased participation of riflemen provided leaders with greater amounts of firepower, and the soldiers' increased confidence and lethality improved commanders' ability to maximize and control their available combat power.

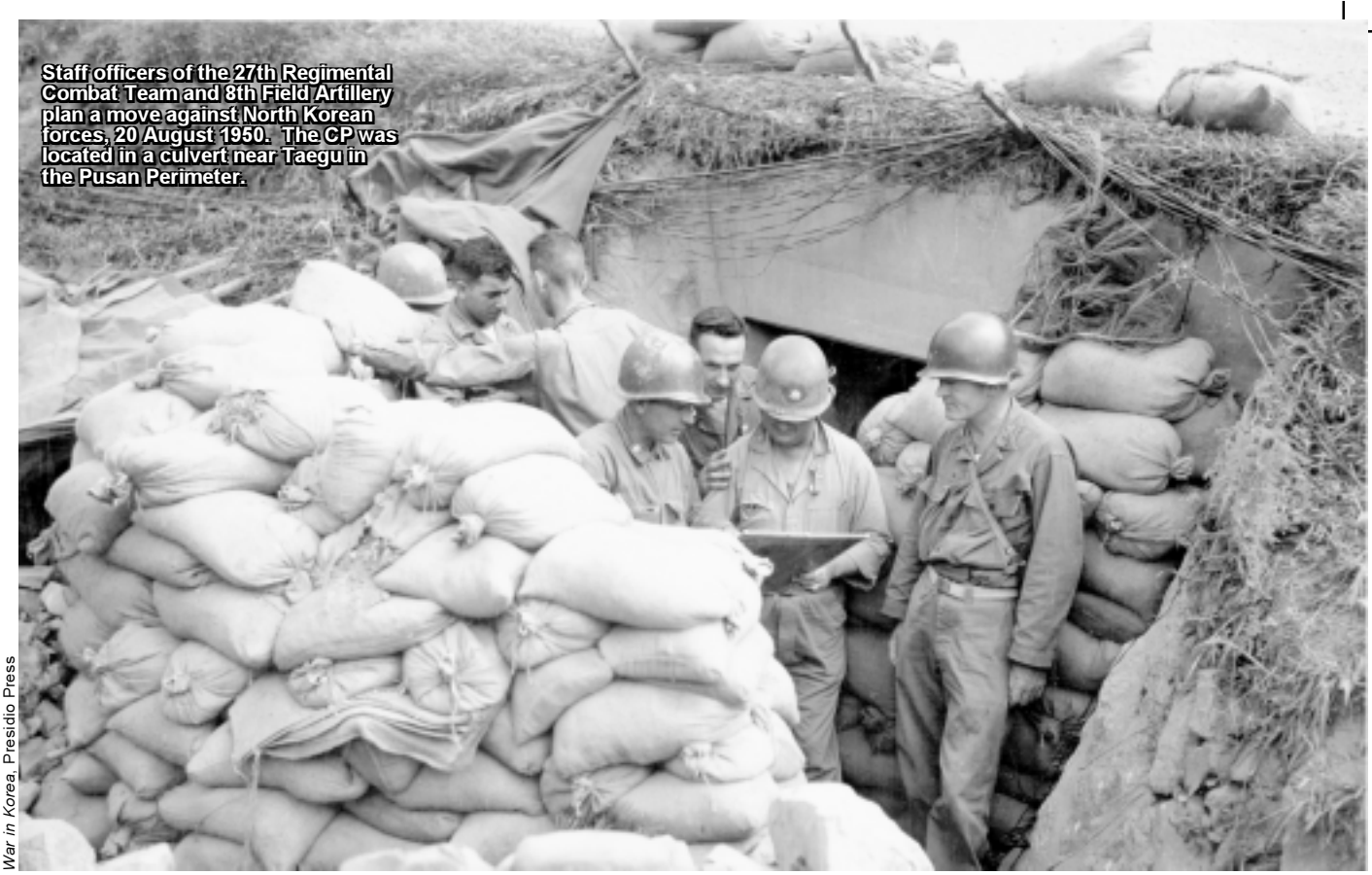
In addition, commanders realized that the greater number of automatic weapons in the Army's small units and the increased combat participation of a unit's soldiers required an organizational change to improve combat leaders' ability to control their more lethal units. Recognizing the inherent galvanizing power of automatic weapons, the Army reorganized the infantry squad in 1955, adding an additional leader and rifleman to its existing nine-soldier unit. The new 11-soldier squad was also structured quite differently from its Korean War predecessor, now organized into two five-soldier fire teams based around each of the unit's automatic weapons.[12]

This change provided a manageable span of control for all three leaders in a squad.[13] With team leaders responsible for controlling the actions of four soldiers each, a squad leader's span of control was reduced significantly. This change also allowed much better observation and supervision of individual soldiers in combat. The greater number of unit leaders could encourage even more participation in battle because almost certainly, at least one of the three leaders would be able to see and interact with every soldier in the squad.[14]

In the end, a combination of continued organizational refinements to the infantry squad and platoon, helped raise the ratio of fire to between 90 and 95 percent in Vietnam and maintain it at that level in contemporary times.[15] Those improvements include subsequent increases in the firepower allotted to these elements, improved marksmanship training, the adoption of fire teams based around automatic weapons and an increased number of leaders. These changes—and their impact—are still present in today's force.

Increasing control over direct fires has been difficult enough, but direct fires often provide only a small portion of commanders' available firepower. The majority of their combat power may come from indirect fires. Since these assets are usually not organic to a unit, synchronizing indirect fires requires coordination and is perhaps more difficult than orchestrating direct fires because of the distances and communication required to bring about the desired effect. Commanders can improve their control over indirect fires by ensuring that their subordinates make the best possible use of their available assets and by having the most rapid possible response of these assets in combat. Given the inordinately important role indirect fires played in the Korean War, especially during the conflict's last two years, it is not surprising that the Army learned valuable lessons about synchronizing artillery fires and close air support which are now integral to warfighting doctrine.

The doctrinal change most directly attributable to the Korean War is the standardization and inclusion



Staff officers of the 27th Regimental Combat Team and 8th Field Artillery plan a move against North Korean forces, 20 August 1950. The CP was located in a culvert near Taegu in the Pusan Perimeter.

War in Korea, Presidio Press

The doctrinal change most directly attributable to the Korean War is the standardization and inclusion of an artillery fire support annex into operations orders at the regimental (brigade) and battalion levels. Chief of Army Field Forces General John R. Hodge directed that all "written regimental and battalion orders must contain a fire-support annex to insure that all infantry supporting weapons are fully utilized through assignment of specific missions."

of an artillery fire support annex into operations orders at the regimental (brigade) and battalion levels. In his first training bulletin of 1953, Chief of Army Field Forces General John R. Hodge noted that infantry commanders and units in Korea did not properly plan for and employ indirect fires. As a corrective measure, Hodge directed that all "written regimental and battalion orders must contain a fire support annex to insure that all infantry supporting weapons are fully utilized through assignment of specific missions."[16] Hodge also promised that the Army's future infantry manuals (the 7-series) would address fire support planning issues in greater detail and that forthcoming training circulars would further emphasize these issues. He concluded by encouraging commanders to integrate requirements to plan for and employ all available weapons systems into company, battalion and regimental field problems.[17]

Adopted in 1953, Hodge's directive to include fire support annexes in operations orders down to the battalion level became even more vital to the Army's success during the so-called Pentomic era (1955-1962). Because of the variety of missions assigned to the Army during Dwight D. Eisenhower's presidency, it became more important than ever to maximize the firepower available to commanders. The addition of aerial rocket artillery in Vietnam further increased the complexity of controlling indirect fires for infantry commanders, as did the arrival of the Multiple Launched Rocket System (MLRS) in the 1980s. Essentially, Hodge's 1953 directive addressed a control issue infantry commanders had faced since World War I and provided a solution by making ground commanders down to battalion level explicitly responsible for planning, coordinating and employing artillery. Hodge realized that synchronization maximized the impact of indirect fires on the battlefield, and today's doctrine reflects his views 47 years ago.

Another area of significant doctrinal change resulting from the Korean War involved the response time to immediate close air support requests. As the Air Force became more responsive to Army requests for immediate close air support, ground commanders increased their overall combat power and control over the firepower assets themselves.

Despite public statements by several senior Army leaders to the contrary, numerous ground commanders of the period expressed repeated dissatisfaction with the Air Force response time for immediate close air support requests. Studies prepared by General Edward M. Almond, the US X Corps commander

during the first year of the Korean War calculated the average response time for an immediate close air support request as 58 minutes. Based on his World War II experience as a division commander in Italy and the battlefield situation in Korea, Almond believed the battlefield situation demanded a response time of 30 minutes or less. Although perhaps correct, Almond's standard was completely unrealistic for the Fifth Air Force in the Korean War, given its available close air support assets, the existing target request system and the period's communications equipment.

The Korean War had perhaps its greatest impact with respect to the control of theater CINCs. . . This system, still in place today, requires theater CINCs to report directly to the secretary of defense, with the JCS serving as the secretary of defense's military advisers and providing staff support.

Nevertheless, Almond's criticism reflected the concerns of many other ground commanders, and the Air Force, hypersensitive to criticism as a newly independent service, was loath to accept any agreement that would cause them to lose control of any air assets. The Air Force finally met Almond's standard of a 30-minute response time for immediate close air support requests during the Vietnam War, thus improving the ability of ground commanders to control their available combat power.[18] This outcome is even more remarkable considering the Air Force's Cold War focus on its Strategic Air Command; the Army was still able to persuade the Air Force to improve its Tactical Air Force capabilities.

Moving even further away from the battlefield, the Korean War had perhaps its greatest impact with respect to the control of theater CINCs. American practice during the First and Second World Wars had been to provide broad guidance to the secretary of war and the chief of staff and then allow the CINCs to determine their own courses of action within their respective theaters largely unencumbered by guidance, advice or interference from Washington, D.C. After the Joint Chiefs of Staff (JCS) struggled to control the actions of the US and UN theater CINC, General Douglas MacArthur during the first year of the Korean War, Congress, with Eisenhower's full support, amended the National Security Act of 1947 by passing the Reorganization Act of 1958. The Reorganization Act clearly established unquestioned command authority for unified commands with the secretary of defense and abolished the largely ineffective system of assigning "executive agents" to manage conflicts for the JCS.[19] This system, still in place today, requires theater CINCs to report directly to the secretary of defense, with the JCS serving as the secretary of defense's military advisers and providing staff support.

During the first 11 months of the Korean War, some of MacArthur's actions as theater CINC required President Harry S. Truman to relieve him of his commands in April 1951. This relief highlighted the ambiguity of the system established by the National Security Act of 1947 (and its 1949 amendment) and provided the major impetus for increasing direct civilian control over military operations. While perhaps based on good intentions, this system of control was somewhat perverted during the Vietnam War, with the president and the secretary of defense designating specific bombing targets, but it proved very effective during Operations *Just Cause* and *Desert Storm*. Thus, perhaps the most important issue of control, that over theater CINCs, was resolved as a result of actions during the Korean War.

While many important doctrinal improvements of the past 50 years have their roots in the Korean War, surprisingly, neither the development of air mobility nor the training revolution of the mid-1970s and 1980s, perhaps the two most significant Army innovations since World War II, were direct responses to the Army's experience in Korea. Since helicopters were first used in Korea to move troops around the battlefield and the rugged Korean terrain presented ground forces with significant mobility challenges, it seems logical to assume that the Army started developing its airmobile capability during the Korean War. However, the Army's air mobility doctrine did not actually begin its development until several years after the Korean War during the Pentomic era as a way to give combat units the ability to remain dispersed and then consolidate rapidly.[20]

Similarly, the Army's training revolution was not a direct response to Task Force *Smith*'s performance."[21] Rather, it was mostly due to the influence of General William E. DePuy during his tenure as the Army's first Training and Doctrine (TRADOC) commander in the mid-1970s and the determined efforts of many committed officers and NCOs.[22] The fact that neither the training revolution nor the development of air mobility has direct ties to the Korean War experience suggests that the improvements in controlling combat power on the battlefield were perhaps the most important doctrinal legacies of the Korean War for the Army.

The significant lessons with respect to controlling combat power that the US Army learned during the Korean War and implemented throughout the past half-century are as relevant now as they were 50

years ago. At the beginning of the Cold War, America had to learn how to "harness its thunderbolts," meaning that the military had to learn how to maximize combat power during limited war. The key to this process was developing the ability to control combat power, and this capability arose from a variety of innovations and changes that collectively have had a significant influence on contemporary Army doctrine. Inspired by its Korean War experience, the Army changed the organization of its smallest infantry units, improved its marksmanship training, added a fire support annex to all operations orders down to battalion level, convinced the Air Force to improve its response time for immediate close air support requests and clarified the chain of command for theater CINCs. Each of these changes was significant on its own, but taken together, they allowed the Army and the nation to increase control over available combat power dramatically.

Indeed, since the end of the Korean War, the Army has made perhaps its most significant advances in synchronizing and orchestrating combat power. These changes followed a significant reduction in force and limited war, came during a period of tremendous global uncertainty and have increased the ability of commanders to delegate authority, synchronize battlefield actions and operate relatively unfettered in combat. For the current Army, coming out of a recent period of downsizing and facing an uncertain and dangerous international situation, these same lessons are likely to remain valid well into the 21st century. ***MR***

NOTES

1. By "control," I mean the following: the ability to direct combat power, the ability to synchronize (arrange activities in time and space to mass at the decisive point) combat power and the ability to orchestrate (coordinate ongoing activities to achieve a desired effect) combat power. FM 100-5, *Operations* (Washington, DC: Headquarters, Department of the Army, 1993), 2-8, 2-15. The definition and description of the term "orchestration" are my own based upon a briefing I received from Colonel David Fastbend at the United States Military Academy in spring 1997 on the status of the new FM 100-5.

2. I have addressed only those changes that I believe to be both legitimate and significant. To qualify as a legitimate change, it must have definite roots in the Korean War experience and not be merely an evolutionary modification that occurred coincidentally after the Korean War. A significant change must have survived the Pentomic era, the Reorganization of Army Divisions (ROAD) era, the Vietnam War, the Volunteer Army (VOLAR) era and the Army of Excellence (AOE) era and must still be present and largely unchanged in today's emerging Force XXI.

3. FM 100-5, *Operations*, 2-15.

4. John K. Mahon and Romana Danysh, *Infantry, Part I: Regular Army*, Army Lineage Series (Washington, DC: U.S. Army Center of Military History, 1972), 73. For information on the addition of the second BAR to the squad, see also COL Robert B. Rigg, "Wither the Squad?" *ARMY*, February 1960, 39. The Army made this authorized but informal practice during the Korean War official through a change to the standard Table of Organization and Equipment for the Infantry Rifle Squad in 1953.

5. Mahon and Danysh, *Infantry*, 73.

6. Marshall's "ratio of fire" reflected the percentage of soldiers in contact who claimed to have actually fired their weapons in an engagement. S.L.A. Marshall, *Men Against Fire: The Problem of Battle Command in Future War* (Washington, DC: The Infantry Journal Press, 1947; reprint ed., Gloucester, MA: Peter Smith), 5, 9-10, 57 (hereafter cited as Marshall, *Men Against Fire*). See also S.L.A. Marshall, *Commentary on Infantry Operations and Weapons Usage in Korea, Winter 1950-1951*, (Chevy Chase, MD: The Johns Hopkins Operations Research Office, 1951; reprint ed., Fleet Marine Force Reference Publication (FMFRP) 12-6, *Commentary on Infantry Operations and Weapons Usage in Korea, Washington*, DC: Headquarters, United States Marine Corps, 1989), 4-5, 54-55 (hereafter cited as Marshall, *Commentary on Infantry in Korea*). The substance of my findings will appear in a forthcoming article in *The Journal of Military History* entitled, "Filling the Empty Battlefield: S.L.A. Marshall and the Ratio of Fire in Korea."

7. Marshall, *Men Against Fire*, 5, 9-10.

8. Howard H. McFann et al., *Trainfire I: A New Course in Basic Rifle Marksmanship*, Human Resources Research Office, Technical Report 22 (Washington, DC: George Washington University, Human Resources Research Office, October 1955), 4-12; Colonel Nelson I. Fooks, "Shoot Fast and Straight," *Army Information Digest*, June 1957, 35-38; "Trainfire: A New Approach to Rifle Marksmanship," *Infantry School Quarterly*, 46:1, January 1956, 47-54.

9. McFann et al., Trainfire I, 17-20, 26-32, 75-83, 100-103; Fooks, "Shoot Fast and Straight," 35-38; "Trainfire: A New Approach to Rifle Marksmanship," 47-54; "Trainfire I Adopted," *Infantry*, 47:3, July 1957, 89.

10. "Trainfire I Adopted," 89. McFann et al., *Trainfire I*, 9, 54-63; "Trainfire: A New Approach to Rifle Marksmanship," 47-48; Major F.D.G. Williams, *SLAM: The Influence of S.L.A. Marshall on the United States Army*, TRADOC Historical Monograph Series (Fort Monroe, VA: Office of the Command Historian, United States Army Training and doctrine Command, 1994), 74, fn 32.

11. McFann et al., *Trainfire I*, 17-20, 26-32, 75-83, 100-103; Fooks, "Shoot Fast and Straight," 35-38; "Trainfire: A New Approach to Rifle Marksmanship," 47-54; "Trainfire I Adopted," 89.

12. Marvin L. Worley, Jr., *New Developments in Army Weapons, Tactics, Organization, and Equipment* (Harrisburg, PA: The Stackpole Company, 1959), 90, 97.

13. Most sociologists agree that the optimal span of control for the average individual is between two and five elements.

14. For a more complete treatment of this phenomenon, see FM 100-5, *Operations*, 14-2.

15. Author Dave Grossman reports these figures based upon the works of someone named Scott and R. W. Glenn. Glenn's findings appear in "Men and Fire in Vietnam," *ARMY*, April 1989, 18-27. Dave Grossman, *On Killing: The Psychological Cost of Learning to Kill in War and Society* (Boston: Little, Brown, and Company, 1995), xv, 35.

16. GEN John R. Hodge, "Army Field Forces Training Bulletin Number 1," (Fort Monroe, Virginia: Chief of Army Field Forces Office, 20 march 1953), 2-3. From 1948 to 1955, the chief of Army Field Forces was somewhat akin to our present-day TRADOC commander in that he was responsible supervising training and developing doctrine for the field Army. Thus, a directive from this individual impacted the entire Army. James E. Hewes Jr., *From Root to McNamara: Army Organization and Administration, 1900-1963* (Washington, DC: US Army Center of Military History, 1975), 171, 217, 267.

17. Ibid., 3.

18. Retired USAF GEN William W. Momyer contends that the creation of an additional level of control for the corps-level ground commander in Vietnam largely solved the Army's air-ground operations control problems. This change gave the "corps commander some flexibility to change the importance of targets at any given time or to support the ground unit which needed direct air support the most" and finally brought the air-ground system in line with FM 31-35. See Momyer, *Airpower in Three Wars (WW II, Korea, Vietnam)* (Washington, DC: Department of the Air Force, 1978), 261.

19. C.J. Bernardo and Eugene H. Bacon, *American Military Policy: Its Development Since 1775* (Harrisburg, PA: The Stackpole Company, 1961), 514-520.

20. In response to the emerging nuclear threat in combat zones, the doctrine of the Pentomic Army envisioned a "cellular" (as opposed to a linear) battlefield and required its "battle groups" to spread out over wide areas to avoid presenting an adversary with any lucrative targets. After absorbing an opponent's nuclear attacks, the battle groups would quickly regroup and execute their assigned missions. There is little historical evidence to suggest that the Army was interested in developing an air-mobile capability after Korea (even under the leadership of an innovative soldier and Korean War luminary like Matthew B. Ridgway, who helped develop the Army's airborne capability during World War II) until the advent of the Pentomic era, when a desire to actively integrate new technology into the force structure and a mission which required the Army to have a dual capability of warfighting and a form of civic control and defense encouraged such developments. See Christopher C.S. Cheng, *Air Mobility: The Development of a Doctrine* (Westport, CT: Praeger, 1994) for a more complete description of the development of the Army's air mobility doctrine.

21. The Army owes much to author T.R. Fehrenbach for highlighting the its pitiful state of readiness at the outbreak of the Korean War and popularizing the actions of LTC Charles B. Smith's ill-fated command. In fact, Army historical texts published before Fehrenbach's work first appeared in 1963 do not even identify Task Force *Smith* by name and only vaguely refer to its actions. Nevertheless, the Korean War experience had a profound impact on many future leaders. Two such individuals were David Hackworth and John K. Singlaub, both of whom would gain notoriety in the 1970s for their rather spectacular exits from the Army. Despite their rather dramatic departures, they were acknowledged by their fellow officers to be superb trainers, and they each attribute their dedication to becoming great trainers in part to the impact of the Korean War. I am indebted to my colleague CPT Robert Bateman for highlighting the lack of attention paid to Task Force *Smith* by Army historical texts in the decade following the Korean War.

22. DePuy observed that the Vietnam War had destroyed the Army's NCO corps and believed that this loss had robbed the Army of its ability to rely on its NCOs to teach soldiers what they needed to know. These convictions led him to implement a system of training that relied on Soldiers Manuals, Skill Qualification Tests (SQTs), and Army Training and Evaluation Programs (ARTEPs)—a program which brought the Army to its incredible proficiency displayed so convincingly during the 1991 Gulf War. See James Kitfield, *Prodigal Soldiers: How the Generation of Officers Born of Vietnam Revolutionized American Style War* (New York: Simon and Schuster, 1995) for a more complete description of the Army's training revolution.

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